

AMENDMENT AFTER FINAL REJECTION
10/800,518

5000-1-550
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OCT 20 2008

IN THE CLAIMS:

1. (Previously Presented) A method for generating a gigabit-capable passive optical network (GPON) encapsulation method (GEM) frame structure in a gigabit-capable passive optical network, the method comprising the steps of:

i) receiving payload information of the GEM frame to provide a GEM control frame delivering management control information,

ii) generating information representing data type information included in a payload according to payload information of the GEM frame,

iii) including information generated in step ii) into a header of the GEM frame and generating a new GEM frame structure for determining a payload information of the GEM frame, through the header,

wherein information representing data type information included in the payload represents a data type of a payload of the GEM frame, and the GEM frame is one of the control frame, a TDM (Time Division Multiplex) data frame, or an Ethernet data frame.

2 -5. (Canceled)

6. (Previously Presented) The method for generating a GEM frame structure as claimed in claim 1, wherein the payload type information is represented by means of a reserved field, with no predetermined value, in the header of the GEM frame.

7-8. (Canceled)

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9. (Previously Presented) The method as claimed in claim 1, wherein the payload type information is included in predetermined fields having predetermined values in the header of the GEM frame, so that payload type information represents the data type of the payload of the GEM frame.

10. (Currently Amended) A method for processing data in a gigabit-capable passive optical network (GPON), the method comprising the steps of:

i) checking whether a received frame is an ATM frame when an OLT (Optical Line Termination) receives the frame to be transferred;

ii) transmitting the received frame in an ATM cell transmission method if the received frame is identified as the ATM frame in step i);

iii) deciding whether the received frame is a GEM frame if the received frame is not the ATM frame, and checking whether the received frame is a data frame;

iv) transferring the received frame while displaying a payload type including a payload type information, which represents a data type of a payload of the frame in a predetermined field of a header of the frame thereof by performing a data encapsulation with respect to the received frame if the received frame is a data frame; and

v) creating a control frame by using the received frame and transferring the control frame with representing the payload type thereof, if the received frame is not the data frame;

wherein, if the received frame is the GEM frame, the GEM frame ~~includes~~comprises a newly generated GEM frame structure including a GEM frame header having a field representing that a payload of the GEM frame is a control frame, a TDM (Time Division

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Multiplex) data frame, or an Ethernet data frame, thereby representing the payload type.

11. (Original) The method as claimed in claim 10, wherein step iv) includes the substeps of:

vi) checking a transmission method of the received frame if the received frame is the data frame;

vii) performing a TDM data encapsulation with respect to the received frame and transferring the received frame with representing the payload type thereof, if the transmission method confirmed in step vi) is a TDM method; and

viii) performing an Ethernet data encapsulation with respect to the received frame and transferring the received frame with representing the payload type thereof, if the transmission method checked in step vi) is an Ethernet method.

12-16. (Canceled)

17. (Currently Amended) A method for processing data in a gigabit-capable passive optical network (GPON), in which a GPON encapsulation method (GEM) frame is received comprising a newly generated GEM frame structure having a header with representing a payload type of the GEM frame including a payload type information, which represents a data type of a payload of the frame in a predetermined field of a header of the GEM frame for performing an operation according to a represented payload type, wherein an ONT (Optical Network Terminal) supports a GEM method through the steps of:

i) receiving a frame transferred from an OLT (Optical Line Termination) so as to check

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whether the received frame is an ATM (Asynchronous Transfer Mode) frame;

ii) checking information about a payload type included in a header of the received frame by regarding the received frame as a GEM frame as a checked result of step i), if the received frame is not the ATM frame; and

iii) processing the received frame depending on the payload type of the received frame;

wherein the GEM frame includes a GEM frame header having a field representing that a payload of the GEM frame is one of a control frame, a TDM (Time Division Multiplex) data frame, or an Ethernet data frame, thereby representing the payload type of the GEM frame in the GEM frame header.

18. (Original) The method as claimed in claim 17, further comprising a step of treating the received frame as an error, if the received frame is the ATM frame as a checked result of step i).

19-22. (Canceled)